REGIONAL RAIL CAPACITY IMPROVEMENT PROGRAM

Southern California Association of Governments
Briefing Paper
January 5, 2004

TABLE OF CONTENTS

REGIONAL RAIL CAPACITY IMPROVEMENT PROGRAM

1. Introduction

Regional rail operations, both for freight and passengers, are facing the very real prospect of a crippling level of congestion within just a few years time. With Class 1 railroads continually failing to earn a rate of return greater than their cost of capital, it would benefit the public greatly if a means were developed to permit public investments in regional rail capacity. This Briefing Paper details an approach that would provide an institutional and financial structure permitting public participation in the development of regional rail capacity while also ensuring that the local needs for congestion mitigation are fully satisfied. By taking advantage of the interest rate differential between private sector capital costs and tax-credit bonds, an average fee of $5.39 per twenty-foot equivalent unit (TEU) applied to UPRR and BNSF traffic through the Los Angeles Basin Corridor would be sufficient to finance both the $1.2 billion needed for main line capacity and fully $2.2 billion of the surface traffic and other mitigation measures necessary to accommodate forecasted increases in rail movements through local communities (non-containerized shipments have been factored into TEU equivalents). This approach, from the perspective of the railroads, represents a public subsidy of roughly 60 percent of capital improvement requirements.

The Southern California region is facing a crisis in goods movement transportation, characterized by a dramatic growth in rail and truck traffic combined with limited transportation funding and high infrastructure improvement costs. Forecasts of population and employment growth, and projections of increasing international and domestic trade volumes, all point to worsening congestion and the potential for gridlock, an occurrence that would have a serious impact on the region's – and the nation's – economic well-being.

Given the projected growth in freight and passenger railroad traffic, the region faces a serious shortfall in mainline track and intermodal rail yard capacity. The mainlines east of downtown Los Angeles will reach capacity before the end of the decade and will need to be triple- tracked or even quadruple-tracked in some segments. There is also a need to build an estimated 130 highway-rail grade separations east of downtown Los Angeles. Other critical bottlenecks, such as the rail-to-rail crossing at Colton Junction, and the two-track limitation of the Badger Bridge crossing of the Cerritos Channel, will need to be addressed. Additional track extensions, centralized traffic control, storage tracks and other yard improvements in the port area will also have to be constructed. Failure to build these improvements could jeopardize economic growth, environmental quality, and national security.

2. Conceptual Engineering of Rail System Improvements

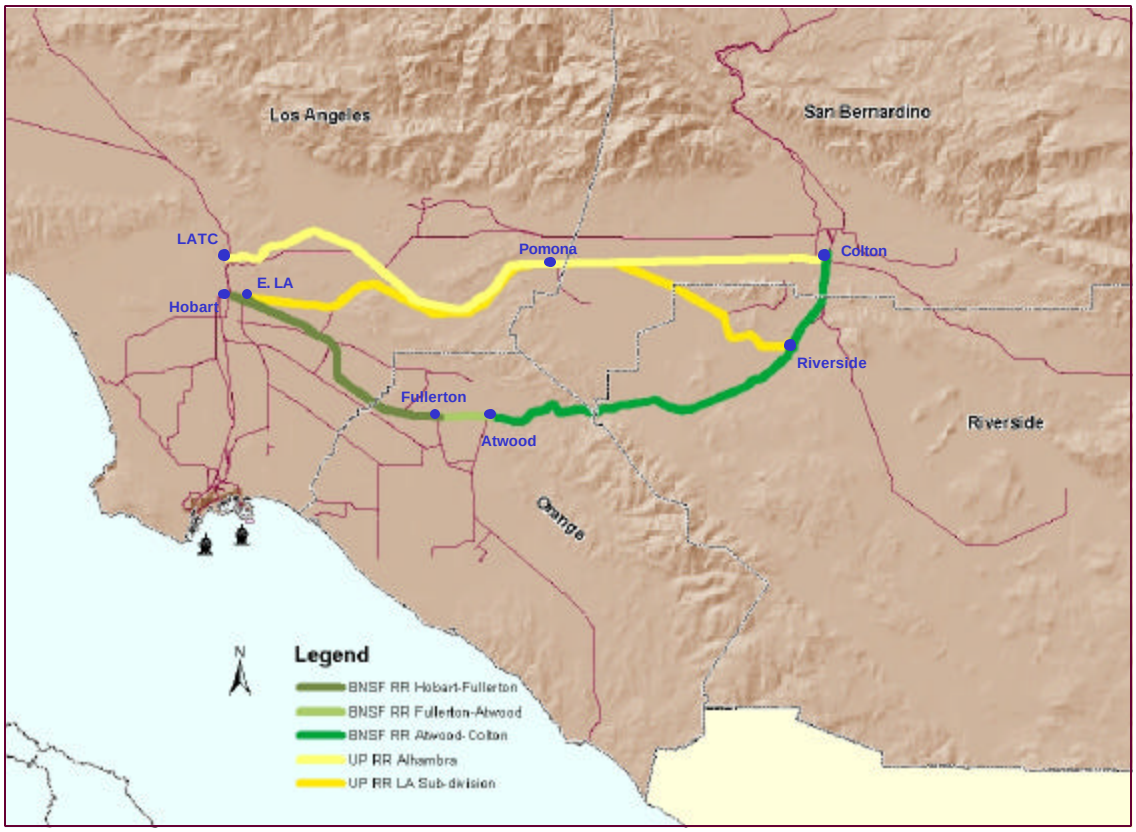
In 2010, the BNSF line will see 75 passenger trains and 80 freight trains per peak day. The two UP lines will split 25 passenger trains and 85 freight trains daily. According to SCAG forecasts, this means that in less than 10 years, the Alameda Corridor-East would carry enough trains to warrant 5-6 tracks.

In 2025, it is estimated that the BNSF line will carry 100 passenger trains and 120 freight trains, while the UPRR lines will share 40 passenger trains and 130 freight trains. This volume would warrant 7 tracks.

With a maximum capacity of 50 trains per day per line, the SCAG study showed that both BNSF and UPRR will have track capacity shortfalls on certain line segments by 2010, barring any major improvements. BNSF has a single rail line running through the Alameda Corridor-East from Redondo to Colton Crossing. For 46.4 miles of the route there are 2 main tracks; 16.6 miles have 3 main tracks; and 1.5 miles are covered by 4 main tracks. The UPRR Los Angeles Sub-division line includes

4.2 miles of triple track (on a portion of the route shared with BNSF); 42.3 miles of double-tracked mainline (3.1 miles with BNSF); and 12.4 miles of single track with sidings. The UPRR Alhambra line (including the East Bank Line) has 21.9 miles of double-tracked mainline, and 38.6 miles of single track with siding.

SCAG examined possible capacity improvements to the Alameda Corridor-East rail lines. The engineering objective was to devise a set of improvements that would maintain present levels of system delay with the number and type of rail operations forecast for 2010 and 2025 traffic levels.



This exercise determined that there was a set of capital improvements and operating options that would allow the system to perform at its present level of service while accommodating the forecast increase in both freight and passenger rail operations. The estimated cost for this rail capacity improvement program totals $1.2 billion.

Forecast growth in the number of daily train operations will also have profound effects on congestion at railroad grade crossings and on the regions' freeway system. As a result, the Alameda Corridor-East Trade Corridor Plan includes grade separations costing an estimated $2.2 billion.

3. Program Implementation Options

The capacity improvement program recommended by SCAG would be financed with a fee on corridor traffic hauled by UPRR and BNSF. It is also recommended that discussions take place with other west coast ports regarding a similar fee approach to minimize any potential for cargo diversion.

The fee will provide a pool of capital for investment in the improvement program. The investment will be made along the regional main line rail alignments. The movement of a greater volume of goods through the main line system will require local congestion mitigation, thus the improvement program provides funding for grade separations.

In order to collect and distribute funds for eligible capital improvement projects throughout the corridor, it is recommended that SCAG create a subsidiary agency. The role of this agency, here referred to as the Southern California Railroad Infrastructure Financing Authority (SCRIFA), would be limited to issuing and servicing debt, administering the fee collection process, and distributing money for approved projects to the railroads and to implementing agencies. Similar agencies should be created for administering funds for rail projects in other regions along the west coast.

SCRIFA would work with project sponsors to seek grant funding for capital and operating purposes, and would also seek federal loans and issue revenue bonds.

Eligible capacity improvement projects in the corridor would include:

- Freight railroad infrastructure (tracks, signals, yards, rail-to-rail grade separations, and other freight rail facilities)
- Commuter rail facilities
- Grade separations of highway-rail crossings.

The UPRR and the BNSF would jointly agree on the priority of alternative freight railroad infrastructure projects. The railroads and the SCRRA (Metrolink) would determine priorities for improving commuter rail operations. SCRIFA, in consultation with all stakeholders, would determine priorities for grade separation investments.

The proposed capacity improvements would include a total investment of $3.4 billion in Southern California: $1.2 billion for railroad infrastructure projects and approximately $2.2 billion in grade separation projects.

These capacity improvement projects would be financed by a fee on containers transiting the corridor. A similar fee structure could be established for rail haul containers through other west coast ports. SCRIFA would adopt a specific fee structure designed to cover projected debt service and administrative costs. The fee would have a term of 20 years from the date of first revenue collection.

National Coordination

Southern California recognizes the national importance of this rail financing methodology, and is working with representatives of the FHWA and other regional planning agencies that are exploring similar initiatives in the Northwest, Mid-West, and Mid-Atlantic regions of the nation. This inter-regional collaboration and federal coordination will work to ensure that federal legislative and funding programs are structured in a fashion that permits each region to address their particular priorities within a uniform and national framework.

Southern California East-West Corridor Train Forecast
(Average Daily Trains)

	2000	2010	2025
Freight	**112**	**165**	**250**
BNSF	57	80	120
UP	55	85	130
Passenger	**58**	**100**	**140**
BNSF	46	75	100
UP	12	25	40
Total – All Trains	**170**	**265**	**390**

(Source: SCAG, L.A. – Inland Empire Railroad Mainline Advanced Planning Study, 2002)

4. Regional Rail Capacity Improvement Program

Preliminary Financial Analysis

A preliminary analysis indicates that, based on certain assumptions, a rail capacity improvement program in the Southern California region would be financially viable:

- To raise capital improvement funds, tax credit bond proceeds would be leveraged from fees assessed on corridor traffic, both marine-related and domestic, hauled by UPRR and BNSF.
- Total capital improvement costs are estimated to be $3.4 billion ($1.2 billion for main line capacity improvements and $2.2 billion for surface traffic and other mitigation measures).
- Fees are assumed to be imposed at an average rate of $5.39 per TEU over the life of the tax credit bond – 20 years.
- TEUs subject to railroad fees range from 14.1 million when fee assessment commences in the year 2007 to 24.3 million in the year 2026 when all debt is retired. Estimates of TEUs subject to fees are based on forecasts of average daily trains throughout the corridor, and non-containerized shipments have been factored into TEU equivalents.

Tax Credit Bond Financing Structure

The financial analysis relies upon the issuance of tax credit bonds—a relatively new public financing structure that would substitute federal tax credits for interest payments. Unlike traditional debt financing, bond investors do not earn the periodic interest income paid by issuers. Instead, buyers of tax-credit bonds earn the ability to claim federal income tax credits which are designed to be in lieu of interest payments.

Accordingly, it is assumed that the railroads, in cooperation with a SCAG subsidiary agency to issue debt, would receive zero-cost financing on their borrowing in utilizing this public financing structure. This would hold the railroads responsible for only the principal portion of the debt. Essentially, this

tax credit bond structure would provide the lowest cost of capital for the railroads than any other source available except for direct grants.

In the comparative analysis table, for example, it is assumed that the railroads would incur roughly a 7 percent interest cost on a 30-year bond. The interest cost alone totals $1.7 billion for a par amount of $1.2 billion—nearly 60 percent of the total cost over the life of the bond. Under a tax credit bond financing structure, however, the federal government effectively subsidizes the interest portion of the debt through federal income tax credits.

Also, it is assumed that a sinking fund is established to pay back the principal borrowed—earning 5 percent interest annually. The investment of bond proceeds further reduces the costs of projects financed with tax credit bonds.

To develop this rail capacity improvement program, analysis included the cost differential between issuing taxable 30-year bonds at 7 percent versus tax credit bonds for the necessary $1.2 billion in main line capacity improvements. Based on this assessment, it was estimated that the railroads could finance both the $1.2 billion needed for main line capacity improvements and $2.2 billion for mitigation measures—at no additional cost under the tax credit bond financing structure relative to the railroads' current cost of capital.

RAILROAD TAX CREDIT BOND FINANCING
Sinking Fund Balance Summary
Par Amount $3,400M

Fiscal Year	TEUs Subject to Fees	Fee per TEU	Annual Payment to Sinking Fund	Interest Earned	Sinking Fund Balance
2007	14,138,017	$ 7.27	$ 102,824,796		$ 102,824,796
2008	14,697,882	$ 7.00	$ 102,824,796	$ 5,141,240	$ 210,790,833
2009	15,279,918	$ 6.73	$ 102,824,796	$ 10,539,542	$ 324,155,171
2010	15,885,003	$ 6.47	$ 102,824,796	$ 16,207,759	$ 443,187,726
2011	16,444,155	$ 6.25	$ 102,824,796	$ 22,159,386	$ 568,171,909
2012	17,022,990	$ 6.04	$ 102,824,796	$ 28,408,595	$ 699,405,300
2013	17,622,199	$ 5.83	$ 102,824,796	$ 34,970,265	$ 837,200,362
2014	18,242,500	$ 5.64	$ 102,824,796	$ 41,860,018	$ 981,885,176
2015	18,884,636	$ 5.44	$ 102,824,796	$ 49,094,259	$ 1,133,804,232
2016	19,448,945	$ 5.29	$ 102,824,796	$ 56,690,212	$ 1,293,319,240
2017	20,112,591	$ 5.11	$ 102,824,796	$ 64,665,962	$ 1,460,809,998
2018	20,756,194	$ 4.95	$ 102,824,796	$ 73,040,500	$ 1,636,675,295
2019	21,420,392	$ 4.80	$ 102,824,796	$ 81,833,765	$ 1,821,333,856
2020	21,876,646	$ 4.70	$ 102,824,796	$ 91,066,693	$ 2,015,225,345
2021	22,342,619	$ 4.60	$ 102,824,796	$ 100,761,267	$ 2,218,811,409
2022	22,818,517	$ 4.51	$ 102,824,796	$ 110,940,570	$ 2,432,576,775
2023	23,304,551	$ 4.41	$ 102,824,796	$ 121,628,839	$ 2,657,030,411
2024	23,800,938	$ 4.32	$ 102,824,796	$ 132,851,521	$ 2,892,706,728
2025	24,038,947	$ 4.28	$ 102,824,796	$ 144,635,336	$ 3,140,166,861
2026	24,279,337	$ 4.24	$ 102,824,796	$ 157,008,343	$ 3,400,000,000

Total Payment to Sinking Fund $2,056,495,929
Total Sinking Fund Earnings @ 5% $1,343,504,071
Average Fee per TEU: $5.39

COMPARATIVE ANALYSIS
Railroad Mitigation Financing
Par Amount $1,200M

	30 Yr Bond @7%	20 Yr Tax Credit Bond (Sinking Fund Earnings @5%)
Annual Debt Service	$ 96,212,691	$ 36,291,105
Interest Cost Over Life of Bond	$1,686,380,735	$ -
Total Cost Over Life of Bond	$2,886,380,735	$ 725,822,093*

*Sinking fund earnings for Tax Credit Bond total $474.20M

Note: Numbers may not add due to rounding